CLAIMS

What Is Claimed:

21. A method for taxonomic identification of a biological analyte comprising:

(a) exposing a solution containing the analyte to a ligand specific for the analyte of interest that has been covalently tethered to a substrate surface with a photostable linker at a distance of at least six Å for the capture of proteins;

(b) separating the bound analyte from the non-binding components of the solution containing the analyte by physical separation, washing or both; and

(c) interrogation of the ligand-tethered substrate surface for analyte binding.

22. The method of claim 21, wherein the biological analyte is selected from the group comprised of:

(a) proteinaceous toxins; and

(b) cytosolic proteins.

23. The method of claim 21, wherein the ligand is a peptide, usually three to twenty amino acids long, specific for a proteinaceous toxin.

24. The method of claim 21, wherein the ligand is a peptide, usually three to twenty amino acids long, specific for a proteinaceous hormone.

25. The method of claim 21, wherein the ligand is a peptide, usually three to twenty amino acids long, specific for a cytosolic protein.

26. The method of claim 21, wherein the detection of the captured analyte is accomplished through the intrinsic fluorescence of the protein.

27. The method of claim 21, wherein the detection of the captured analyte is accomplished through the fluorescence of a reactive dye conjugate exposed to the protein before capture of the analyte by the tethered ligand surface.

28. The method of claim 21, wherein the detection of the captured analyte is accomplished through the fluorescence of a reactive dye conjugate exposed to the protein after capture of the analyte by the tethered ligand surface.

29. The method of claim 21, wherein the detection of the captured analyte is accomplished through the radioactivity of a reactive compound exposed to the protein before capture of the analyte by the tethered ligand surface.

30. The method of claim 21, wherein the detection of the captured analyte is accomplished through the radioactivity of a reactive compound exposed to the protein after capture by the tethered ligand surface.

31. The method of claim 21, wherein the detection of the captured analyte is accomplished through the luminescence of a reactive dye conjugate exposed to the protein before capture of the analyte by the tethered ligand surface.

32. The method of claim 21, wherein the detection of the captured analyte is accomplished through the luminescence of a reactive dye conjugate exposed to the protein after capture of the analyte by the tethered ligand surface.

33. The method of claim 21, wherein the detection of the captured analyte is accomplished through the phosphorescence of a reactive dye conjugate exposed to the protein before capture of the analyte by the tethered ligand surface.

34. The method of claim 21, wherein the detection of the captured analyte is accomplished through the phosphorescence of a reactive dye conjugate exposed to the protein after capture of the analyte by the tethered ligand surface.

35. The method of claim 21, wherein the detection of the captured analyte is accomplished through the optical absorbance of a reactive dye conjugate exposed to the protein before capture of the analyte by the tethered ligand surface.

36. The method of claim 21, wherein the detection of the captured analyte is accomplished through the optical absorbance of a reactive dye conjugate exposed to the sample after capture of the analyte by the tethered ligand surface.

37. The method of claim 21, wherein the detection of the captured analyte is accomplished through the fluorescent quenching of the fluorescent tethered ligand surface upon binding of the protein.

53. The method of claim 51, wherein the ligands utilized in the array are tethered with a photostable linker at a distance of at least six Å from the substrate surface for the capture of proteinaceous toxins.